

is absorbed by the pith. Grass-straw does not split in this way, and consequently no amount of wetting would cause it to absorb any quantity of water.

In all we expected between 250 and 280 tons of farmyard manure, and we carted out about 180 tons. As already stated, operations were commenced in January, and the dung was ploughed under in June last, being applied at the rate of 60 to 70 loads, equivalent to 25 to 30 tons, per acre. Strips were left unmanured, the plan being to estimate the effect of the manure on the yield of mangolds. Results will be recorded later, after harvesting of the crop.

Whether this process will develop or not is entirely a matter of cost, and that aspect is being investigated. At present we are satisfied that the straw rots satisfactorily if the right conditions for bacterial growth are obtained.

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## CORTICIUM-DISEASE OF POTATOES.

### EXPERIMENTS IN CONTROL.

(Concluded.)

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In a previous article (*Journal* for last month) it was shown that the standard treatments recommended for the control of corticium-disease, *Corticium vagum* var. *Solani* Burt, were not successful because they did not kill more than about 80 per cent. of the sclerotia present on the tubers treated. Numerous experiments were undertaken with a view to discovering some cheap and efficient means of killing these sclerotia, with the result that mercuric chloride, when acidulated with hydrochloric acid, was found completely to kill all sclerotia even at strengths much less than usually recommended.

These experiments solved the problem in so far as the steep was concerned, so that there then remained the problem of cheapening the process in both material and labour. In regard to the latter factor, it is evident that a more practical method than the two-hour steep is necessary in dealing with the large quantity of seed tubers used by commercial growers. Therefore experiments were undertaken with a view to modifying the period of immersion.

For the smaller growers with a small quantity of seed to treat, it might be more practicable to place the tubers overnight in some suitable solution, to be ready for planting the following morning. Graph 7 shows that a solution of 1 part of mercuric chloride in 10,000 parts of water, when acidified with as little as 0.1 per cent. of hydrochloric acid, gives complete killing of all sclerotia, a result not obtained with an acid-free solution of this strength.

Further experiments were undertaken with a view to reducing the time of immersion to such an extent that treatment could be made a continuous process, thus making machine treatment feasible. The results finally obtained are shown in Graph 8. In this experiment tubers were immersed for five minutes in acidulated mercuric-chloride solutions of the following strengths: Mercuric chloride—1-1,000, 1-1,500, 1-2,000, 1-2,500, 1-3,000; hydrochloric acid—0.5 per cent., 1 per cent.,